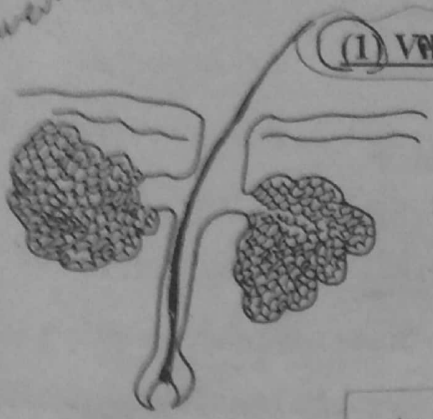
Acne and acneform eruptions

Types of pilo-sebaceous follicles

(1) Vellus follicle



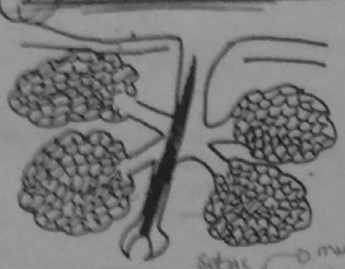
Fine soft hair covering most of the body of children

At puberty

In sebaceous areas : Face, shoulders, chest & upper back (sties of acne vulgaris)

Vellus hair become

(2) Sebaceous follicle

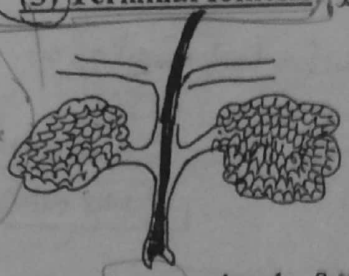


① Has large gland &
② rudimentary follicles

In scalp, beard, eyebrows, axillae & pubis

Vellus hair become

(3) Terminal follicles



Has large gland & powerful hair follicle.

N.B. : *Acne does not develop in these follicle as the powerful erecting hair allows free excretion of sebaum.*

Types of scar of acne :

- Sebaceous secretion produced by glandular cell destruction.
- Free seb. Gland: meibomian, Tyson, female genetalia & areola.
- *Composition of sebum*: Mixture of lipids (Wax, esters & cholesterol).

Function of sebum :

1. Antifungal & antibacterial.
2. Protective value.
3. Moisturizing the skin.

Endocrinal control of sebum production :

1. Androgen:
   - At puberty → ↑↑ glandular size & seb. Production.
   - At adult → No effect (gland was stimulated maximally by endogenous androgen).
2. Progesterone: → ↑ Seb. Production.
3. Estrogen: → ↓ seb. Production.
4. Glucocorticoids → ↓ seb. Production through either direct effect or through suppressing adrenal androgen.
5. Pituitary hormones → ↑ seb. Production through either direct effect or through release of gonadal, adrenal or thyroid hormones.
6. Insulin like growth factors → correlate é ↑ Androgen production in women
7. PPAR • peroxisom proliferator activated receptor " P → expressed on seb. gland

$$\text{Sebum production} = \frac{A+P+P}{E+G}$$

↑ sebum Product by PPAR agonist in DMR type

⊕ sebacious gland & Androgen production & Keratinocyte proliferation

milk contain → estrogen, progesteron, IGF-1

Acne vulgaris

* **Definition** : Inflammatory disorder of pilo-seb apparatous characterized by the formation of comedones erythematous papules & pustules, less frequently nodules or cyst.

* **Epidemiology** :

Adolescence in both sex.

* **Aetiopathogenesis**:

(1) *Increased sebum production* : (At puberty)

- Acne patients secrete more sebum than normal, the level of secretion correlates with the severity of acne.
- This occur due to :

(1) ↑ Androgen production :
   - Male from testis.
   - Female from suprarenal gland.

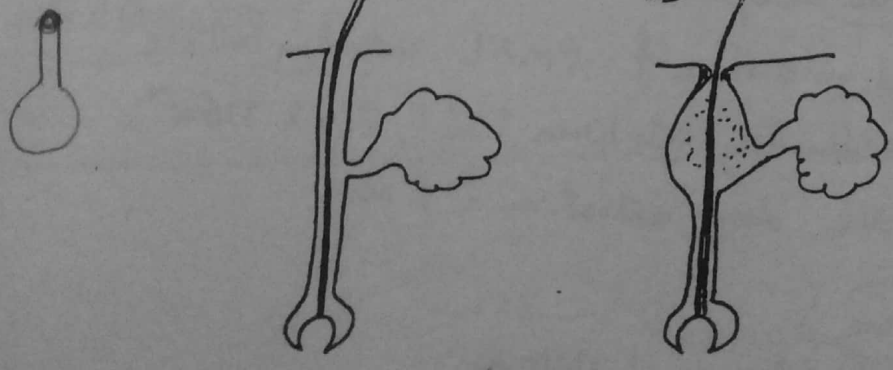
OR

(2) ↑ Sensetivity of androgenic receptor of seb. Glands to the normal androgen level.

(2) *Ductal hypercornification (comedone formation)* :

Ductal cornification results from :

- ↑ Androgen production.
- ↑ irritant effect of sebum (especially squlene & squalene oxide),
- Deficiency in essential linolenic acid in sebum (has been demonstrated in comedones)



Ductal hypercornification there is increase formation & or inadequate separation of ductal corneocytes.

(3) Proliferation of P. acnes

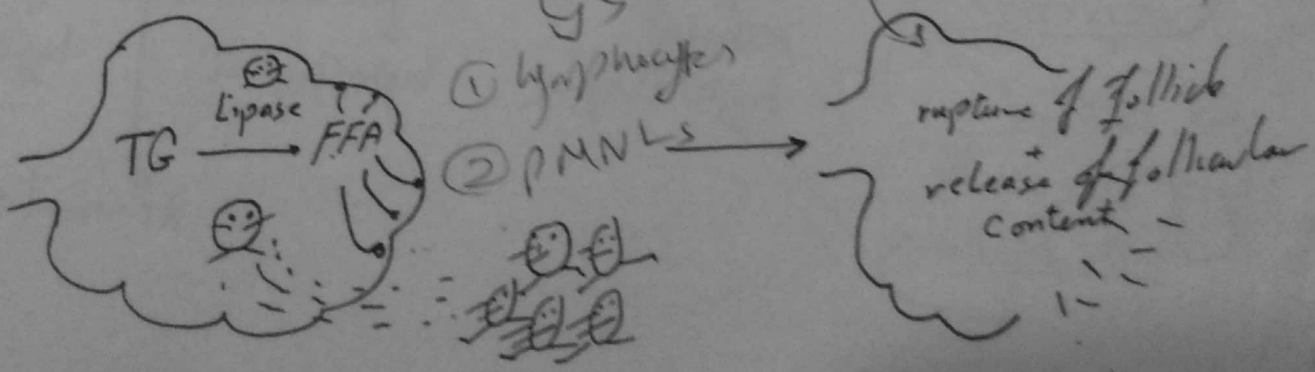
Blocking of sebaceous follicles by ductal hyper-cornification will create an anaerobic microenvironment which will favor the proliferation of P. acnes.

Colonization of P. acnes is involved in the initiation of inflamed acne lesions.

(4) Inflammation :

- Proliferated P. acnes will liberate lipase which converte triglyceride in sebum to free fatty acid → Erosion & disruption of follicular wall → escape of the follicular content → production of non specific inflammatory reaction.
- Proliferated P. acnes will also release chemotactic factors within the duct which diffuse into the dermis attracting lymphocytes & polymorphs with production of inflammation.

- More severe degree of inflammation result from rupture of the follicle and liberation of the follicular contents into the dermis. Early in the inflammation, Lymphocytes are involved, but within 24-48 hours the PMNLs become active.



Other etiologic factors :

- Genetic
- Stress.
- ~~Sweating~~. Premenstrual flare
- Diet

Clinical picture :

- Polymorphic rashs comedones, papules, pustules or cyst
  - Comedones consist of blackheads (open comedones) in which the black color is due to melanin not direct & white heads (closed comedones).
  - Inflammatory lesions may be superficial or deep.
  - Superficial lesions are usually papules or pustules, while deep lesions are nodules or deep pustules deep inflammatory lesions are after associated with scarring.
- Grading of acne vulgaris :

Grading	Comedones	Papules/pustules	Nodules
Mild	Few to numerous	Few to several	None
Moderate	Numerous and/or extensive	Several to many	Few to several
Severe	Severe	Neumrous and/or extensive	Many

Clinical variants :

1) *Tropical acne* :

- In tropics.
- Nodulocystic acne affecting chest-back & arms sparing to face.

أ.م: papular
^ disseminated

(15)

Clinical Types of acne

clinical variants of acne

Acne variants

1. Acne Conglobata
2. Acne Fulminans
3. Neonatal acne
4. infantile acne
5. Post-adolescent acne
6. acne excoriée
7. Cosmetic / Pomade acne
8. acne Detergicans
9. acne mechanica
10. Premenstrual acne
11. occupational acne (chlorance)
12. senile (solar) comedones
13. Drug-induced acne = acne medicamentosa
14. Pyoderma faciale
15. solid facial oedema

ac

① acne conglobata — التكتلية

Blackhead

Conglobata: Shaped in Rounded mass or ball.

incidence Mainly in young Males.

Site usually on
1. Trunk
2. Face, cheeks
3. limbs

C.P Sever form of inflammatory nodulocystic acne
characterized by
1. nodules
2. Tender large cysts that may fuse to form multiple draining sinuses, Suppuration
3. Grouped multiple fused blackheads (double or Triple)
4. scarring of Keloidal type is present
5. No systemic manifestations.

* Many patients don't have preceeding A.v lesions. → ما فيش تاريخ acne قبل كده

• Acne conglobata differentiated from acne vulgaris
- by its occurrence later in life →
- unremitting course. →

* Follicular occlusion triad

① acne conglobata
② Hidradenitis suppurativa ⟶ ...
③ Dissecting cellulitis of the scalp
④ pilonidal cysts.

Primary defect

① alteration of keratinization within the sebaceous follicle
↘ ② leakage of Retained sweat into tissue Surrounding plugged eccrine ducts.

for nodulocystic acne

Treatment

Start oral isotretinoids immediately
not require oral steroids ✗✗✗✗

PAPA Syndrome ⟶ autosomal dominant autoinflammatory disorder.

① Sterile Pyogenic authritis
Pyoderma gangrosum
acne conglobata.

• acne fulminans
• Pyoderma Faciale

② Acne fulminans = acute febrile ulcerating acne conglobata with polyarthralgia and leukemoid reaction

= acne maligna

- Most severe form of acne
- incidence: Very Rare
- sex: almost exclusively in young Men
- age: 13-16 year

- c/p:
  - Sudden onset of severe nodulocystic acne, suppurative acne lesions + systemic manifestations
  - Patients usually have mild to moderate acne prior to onset of acne fulminans
  - Initially it resembles acne conglobata with presence of highly inflammatory lesions
  - Sites: on upper chest, back, with variable involvement of face

- characteristic morphological features
  - formation of haemorrhagic nodules, plaques → that undergo suppurative degeneration
    - leaving ragged ulceration
      - base of ulcer is filled with gelatinous necrotic debris

Ddx: Vasculitis

① acne conglobata
② acne fulminans
③ G-ve folliculitis
④ pyoderma gangrenosum

various systemic manifestations

① fever
② arthralgia
③ malaise, fatigue
④ myalgias
⑤ hepatosplenomegaly
⑥ osteolytic bone lesions

Lab findings
① anaemia
② leucocytosis
③ ↑ ESR
④ proteinuria

Treatment
① Bed rest, hospitalization
② surgical debridement, chloramphenicol compresses of 20-40% urea solution
③ Topical antibacterial cleaner
↳ medicated soap
Topical high-potency (corticosteroids) in the active phase of the disease or intralesional CST.
④ Systemic Rx → isotretinoin alone or
Combined with systemic corticosteroids
⑤ NSAIDs for myalgias
⑥ Immunosuppressive (azathioprine)
⑦ Dapsone
⑧ Systemic antibiotics (limited efficacy)

SAPHO syndrome

- S: Synovitis
- A: acne (acne fulminans, acne conglobata, Pustular Psoriasis, Palmoplantar pustulosis)
- P: Pustulosis
- H: hyperostosis
- O: osteomyelitis — Bone

Compar.

	acne fulminans	acne conglobata
① Sex	exclusively Men	Men > women
② age	13-16 y	20-25 y
③ onset	Sudden (acute febrile illness)	Slow
④ site	Face, Neck, Chest, back	
⑤ c/p	haemorrhagic ulceration, Constitutions → Suppuration → Ragged ulceration	Nodules, cysts, polyporous Comedones → sinuses, tract → Keloidal
⑥ Systemic constitutions	very Common (arthralgia, fever, malaise, HSM, myalgia)	uncommon X
⑦ Response to Systemic antibiotic	No (limited) to AB	Yes!
	• isotretinoin + CST • Topical potent CST • antibacterial cleanser, medicated soap • hospitalization	isotret No CST (usually not need CST)
		PAPA

girls

③ Pyoderma faciale (Rosacea fulminans)

- no previous history of acne

Sex
- post addescant girls (20-40y)

C.P
- Reddish cyanotic erythema
- with abscesses, cysts

Distinguish From acne by ① absence of comedones XX
② Rapid onset
③ fulminant Course
④ absence of acne on back, chest X

Rapid

Face

It is rel

C.P

Rx oral steroids (1) followed by isotretinoin (2)

Preadolescent Acne

- Neonatal
- Infantile
- childhood / Juvenile

④ Neonatal acne (neonatal cephalic Pustulosis)

Malassezia

incidence up to 20% of Newborns may be present at birth or develop during the first few months of life

Sex more common in males

Pathogensis
- ~~Related to hormonal activity in utero~~
- An inflammatory Response to Malassezia species (Furfur) have been proposed as the etiology.

disorder Renamed as (neonatal cephalic Pustul

additional support for this view → clinical response to Rx with Topical 2% ketoconazole Cre

Scanned by CamScanner

Course: It is relatively mild, Regress Spontaneously in most cases by age of
- 6 months
- not associated with significant scarring or ↑ incidence of acne in later life

C-P:
- Facial papules or pustules
- Typically No Comedones

Sites:
- primarily on cheeks, Nasal bridge
(but Forehead, chin, Neck, upper trunk Can be also involved)

Rx:
- No Treatment except Reassurance for parents with normal activity
- Topical imidazoles (Ketoconazole 2% cream)
(Nizoral cream)

. acne soap
. Retin A. 0.025%

after birth).
neonatal Sebaceous excretion rates tends to match high levels seen in their mothers

Infantile acne

- age: usually begins bet 3rd, sixth month of life (3→6m) (Persist beyond 4 weeks of age or have an onset later)
- Sex:
  - more common in males
  - It is Rare

C-P:
- Can be Severe with nodules, cysts
- In contrast to Neonatal acne → Comedo is prominant
  - pitted scar Can develop
- Some cases associated with Virilizing Tumors

Course:
- Resolves within 1-2 years, Remains quiescent until around puberty
- or may Persist into adolescent

↑ Severe acne ↑ → later life

Pathogenesis: hormonal imbalances intrinsic to this stage of development (elevated LH, Testosterone, DHEA)
- these androgen levels normally ↓ by 6-12 m of age
- maternal hormones play a minor role

Rx
- Topical Retinoids
- Benzoyl peroxide } first line of Rx
- oral antibiotics → erythromycin, azithromycin (helpful in more severe inflammatory condition)

Postadolescent acne

age: inflammatory acne persisting beyond 25 years of age

sex: more common in females

C/P: Tender, deep seated Papulonodules with premenstral flare, good Response to hormonal Rx

sites:
- lower ⅓ of face
- Jawline
- Neck

- ⅓ of affected females → have other signs of hyperandrogenism
  - female pattern baldness
  - Insulin Resistance
    Acanthosis Nigricans
  - obesity
  - hirsutism
  - menstrual irregularities

check: LH, FSH, DHEA-S, Total Testosterone, Free testosterone

Neonatal acne	Infantile acne
May be present at birth or develop during the 1st few months	- Begins between 3rd & 6th month
More common in males	- More common in males
Mild & regress spontaneously by the age of 6 months	- Severe nodules & cysts & may persist to age of 5 years
- Not associated with significant scarring or increased incidence of acne later in life	- Associated with significant scarring or increased incidence of acne later in life
	- Associated with vililizing tumors
Pathogenesis: Species of malassezia - Response to topical ketoconazole - Sebum excretion: high level	- Intrinsic hormonal imbalance ↑ testosterone, LH, DHEA

Scanned by CamScanner

age group	Location	Morphology	Sex
• Neonates	Nose, cheeks, forehead	✗ No comedones (papules or pustules) ✓ No scarring.	more in males
• infants	Face	✓ prominent comedones · inflammatory · no nodules, cysts ✓ pitted scar	common in males
• preteens	centrofacial	comedonal	Both
• Teens	face, Trunk	Mixed	Both
• adults	perioral, Jawline, chin	inflammatory	women

premenstrual acne

- Papulo pustular lesions week prior
- estrogen - dominant contraceptives → ↓ acne
  - ↓ sebum
  - progest: ↓ sebum

excoriated acne (Acne excoriée des Jeunes filles)
(picker's acne)

* Sex girls who have typical type of mild acne.

* C.P
  - A.V with excoriated lesions
  - primary acne is small or even nonexistent but the patient have a compulsive habits of picking, squeezing them.
  - scratching, erosions, crusting
  - atrophy, scarring

- It is subset of neurotic excoriations associated with → OCD
  → anxiety disorder
  → personality disorder → obsessive compulsive

℞
1. Treatment of acne
2. use of antidepressants (doxepin, SSRIs) or psychotherapy

Acne mechanica

physical Trauma

- Secondary to Repeated Mechanical, frictional obstruction of Pilosebaceous outlet.
- acne at sites of physical Trauma
  - Tight brasseries Straps
  - Rubbing by helmets
  - chin straps
  - collars
  - on Neck of violin players (Fiddler's Neck)

Repititive Trauma from violin placement on lateral side of Neck → well defined lichenified hyperpigmented plaques interspersed with comedones

linear geometrically distributed areas suggest acne Mechanica.